



10/509 252

Cofc ✓

PATENTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 7,297,697 B2 Docket: 15395.10USWO
Issue Date: NOVEMBER 20, 2007 Patentee: MIDHA ET AL.
Title: 4-(DIARYLMETHYL)-1-PIPERAZINYL DERIVATIVES

CERTIFICATE UNDER 37 CFR 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Certificate of Correction Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on June 10, 2008.

By: 
Name: Kristine A. Wacek

REQUEST FOR CERTIFICATE OF CORRECTION

Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450



Certificate
JUN 18 2003
of Correction

Sir:

It is requested that a Certificate of Correction be issued correcting printing errors appearing in the above-identified United States patent. One copy of the text of the Certificate in the suggested form is enclosed.


As some of the errors listed are due to Applicants' mistake, our check in the amount of \$100.00 is enclosed to cover the Certificate fee.

Issuance of the Certificate of Correction would neither expand nor contract the scope of the claims, and re-examination is not required.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Date: 10 June '08


Mark T. Skoog
Reg. No. 40,178
MTS:PLSkaw

RECEIVED-USPTO
Patent Publication

06/16/2008 SSSESHE1 00000022 7297697

01 FC:1811

100.00 OP

JUN 18 2008



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 7,297,697 B2
Issued: NOVEMBER 20, 2007
Title: 4-(DIARYLMETHYL)-1-PIPERAZINYL DERIVATIVES

CERTIFICATE UNDER 37 CFR 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Certificate of Correction Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on June 10, 2008.

By: 
Name: Kristine A. Wacek

Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

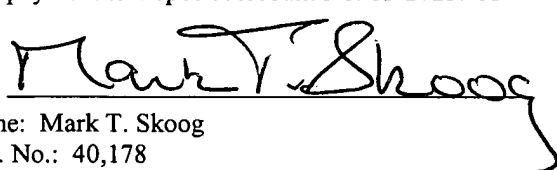
Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Request for Certificate of Correction
- ☒ Certificate of Correction
- ☒ Check in the amount of \$100.00 for Certificate of Correction for Applicants' Errors
- ☒ Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

Merchant & Gould P.C.
P.O. Box 2903 Minneapolis, MN 55402-0903
612.332.5300

By: 
Name: Mark T. Skoog
Reg. No.: 40,178
MSkoog:PLSkaw

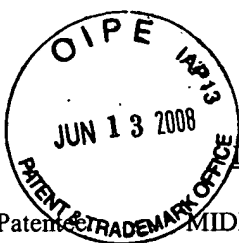
23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

(PTO TRANSMITTAL - POST ISSUANCE)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: MIDHA ET AL.

Docket: 15395.10USWO

Patent No.: 7,297,697 B2

Issued: NOVEMBER 20, 2007

Title: 4-(DIARYLMETHYL)-1-PIPERAZINYL DERIVATIVES

CERTIFICATE UNDER 37 CFR 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Certificate of Correction Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on June 10, 2008.

By:

Name: Kristine A. Wacek

Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Request for Certificate of Correction
- ☒ Certificate of Correction
- ☒ Check in the amount of \$100.00 for Certificate of Correction for Applicants' Errors
- ☒ Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

Merchant & Gould P.C.
P.O. Box 2903 Minneapolis, MN 55402-0903
612.332.5300

By:

Name: Mark T. Skoog

Reg. No.: 40,178

MSkoog:PLSkaw

23552

PATENT TRADEMARK OFFICE

(PTO TRANSMITTAL - POST ISSUANCE)

USPTO
Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 1 of 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Front page (57) Abstract, line 17: "either E or Z configuration;" should read --either *E* or *Z* configuration;--

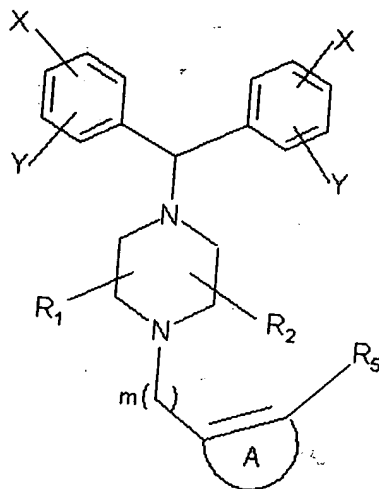
Col. 1, line 40: "either E or Z configuration;" should read --either *E* or *Z* configuration;--

Col. 3, line 56: "either E or Z configuration;" should read --either *E* or *Z* configuration;--

Col. 4, line 53: "either E or Z configuration;" should read --either *E* or *Z* configuration;--

Col 5, lines 15-30: Delete the incorrect compound and insert the correct compound below

--



--

Col. 5, line 51: "are in E configuration," should read --are in *E* configuration,--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,297,697 B2

PAGE 2 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 6, line 4: "in the E or Z configuration" should read --in the *E* or *Z* configuration--

Col. 7, line 18: "N-alkylated with" should read --*N*-alkylated with--

Col. 7, line 20: "or p-toluenesulfonate" should read --or *p*-toluenesulfonate--

Col. 8, line 42: "N-alkylated with" should read --*N*-alkylated with--

Col. 8, line 44: "or p-toluenesulfonate" should read --or *p*-toluenesulfonate--

Col. 9, line 65: "in E or Z configuration," should read --in *E* or *Z* configuration,--

Col. 11, line 54: "R₄ are in E" should read --R₄ are in *E*--

Col. 11, line 55: "by N-alkylating compound" should read --by *N*-alkylating compound--

Col. 14, lines 5-6: "4-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol," should read --4-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol,--

Col. 14, lines 10-11: "1-[bis-(4-fluorophenyl)methyl]piperazine (140g, 0.485mol), toluene (700ml), 4-chloro-2-butene-1-ol (67.25g, 0.631)," should read --1-[bis(4-fluorophenyl)methyl]piperazine (140 g, 0.485 mol), toluene (700 ml), (Z)-4-chloro-2-butene-1-ol (67.25 g, 0.631),--

Col. 14, lines 22-25: "(d, J=4.90Hz, 2H), 4.13 (d, J=3.96Hz, 2H), 4.20 (s, 1H), 5.55-5.75 (m, 1H), 5.75-6.00 (m, 1H), 6.96 (t, J=8.14Hz, 4H)," should read --(d, J=4.90 Hz, 2H), 4.13 (d, J=3.96 Hz, 2H), 4.20 (s, 1H), 5.55-5.75 (m, 1H), 5.75-6.00 (m, 1H), 6.96 (t, J=8.14 Hz, 4H),--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,297,697 B2

PAGE 3 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 14, lines 30-31: "(R,S)-4-{4[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}-(Z)-but-2-en-1-ol, [VIb(R,S)," should read--(R,S)-4-(4[(4-chlorophenyl)phenylmethyl]piperazin-1-yl)-(Z)-but-2-en-1-ol, [VIb(R,S),--

Col. 14, lines 35-37: "(R,S)-1-[(4-chlorophenyl)phenylmethyl]piperazine 8.0g (mol) is converted to (R,S)-4-{4[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}-(Z)-but-2-en-1-ol in a" should read --(R,S)-1-[(4-chlorophenyl)phenylmethyl]piperazine 8.0 g (mol) is converted to (R,S)-4-[4-(4-chlorophenyl)phenylmethyl]piperazin-1-yl)-(Z)-but-2-en-1-ol in a--

Col. 14, line 43: "(J=5.75Hz, 2H), 4.13 (d, J=-5.25Hz, 2H)," should read --(J=5.75Hz, 2H), 4.13 (d, J=-5.25Hz, 2H),--

Col. 14, line 49: "4-{4-Benzhydrylpiperazin-1-yl}-(Z)-but-2-en-1-ol," should read --4-[4-Benzhydrylpiperazin-1-yl]-(Z)-but-2-en-1-ol,--

Col. 14, line 53: "toluene (20ml), 4-chloro-2-butene-1-ol" should read --toluene (20 ml), (Z)-4-chloro-2-butene-1-ol--

Col. 14, line 65: "(J=5.52Hz, 2H), 4.13 (dd, J₁=5.19Hz, J₂=0.68Hz, 2H)," should read --(J=5.52Hz, 2H), 4.13 (dd, J₁=5.19Hz, J₂=0.68Hz, 2H),--

Col. 15, lines 3-4: "4-{4-[Bis-(2,4-difluorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol," should read --4-[4-[Bis(2,4-difluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol,--

Col. 15, lines 8-9: "is converted to 4-{4-[bis-(2,4-difluorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol in a" should read --is converted to 4-[4-[bis(2,4-difluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol in a--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 4 of 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 15, line 15: "(J₁=6.00Hz, J₂=0.74Hz, 2H), 4.14 (dd, J₁=5.31Hz, J₂=0.98" should read --(J₁=6.00Hz, J₂=0.74Hz, 2H), 4.14 (dd, J₁=5.31Hz, J₂=0.98--

Col. 15, lines 20-21: "4-{4-[Bis-(4-chlorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol," should read --4-[4-[Bis(4-chlorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol,--

Col. 15, lines 25-27: "1-[Bis-(4-chlorophenyl)methyl] piperazine (5.044g, mol) is converted to 4-{4-[bis-(4-chlorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol in a" should read --1-[Bis(4-chlorophenyl)methyl]piperazine (5.044 g, mol) is converted to 4-[4-[bis(4-chlorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol in a--

Col. 15, line 32: "(J=5.87Hz, 2H), 4.13 (dd, J₁=5.26Hz, J₂=0.88, 2H)," should read --(J=5.87Hz, 2H), 4.13 (dd, J₁=5.26Hz, J₂=0.88, 2H),--

Col. 15, lines 37-38: "{2-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-yl-methyl}phenyl}methanol" should read --[2-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-yl-methyl]phenyl]methanol--

Col. 15, lines 41-43: "1-[Bis-(4-chlorophenyl)methyl]piperazine (5.0g, 0.0173mol) is converted to {2-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-ylmethyl}phenyl}methanol" should read --1-[Bis(4-chlorophenyl)methyl]piperazine (5.0 g, 0.0173 mol) is converted to [2-[4 [bis(4-fluorophenyl)methyl]piperazin-1-ylmethyl]phenyl]methanol--

Col. 15, lines 54-55: "{2-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl}phenyl}methanol," should read --[2-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl]phenyl]methanol,--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies

0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,297,697 B2

PAGE 5 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 15, lines 58-60: "1-[Bis-(4-chlorophenyl)methyl]piperazine (4.0g, 0.0140mol) is converted to {2-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl}phenyl}methanol" should read --1-[Bis(4-chlorophenyl)methyl]piperazine (4.0 g, 0.0140 mol) is converted to [2-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl]phenyl]methanol--

Col. 16, lines 3-4: "4-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-yl}but-2-yn-1-ol" should read --4-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-yl]but-2-yn-1-ol--

Col. 16, line 9: "To a solution containing 1-[bis-(4-fluorophenyl)methyl]" should read --To a solution containing 1-[bis(4-fluorophenyl)methyl]--

Col. 16, lines 25-26: "(t, J=1.84 Hz, 2H), 4.21 (s, 1H), 4.29 (t, J=1.80 Hz, 2H)," should read --(t, J=1.84 Hz, 2H), 4.21 (s, 1H), 4.29 (t, J=1.80 Hz, 2H),--

Col. 16, line 35: "0-5°C. for 1hr the temperature" should read --0-5°C. the temperature--

Col. 16, lines 56-57: "(R,S)-4-{4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl}but-2-yn-1-ol--" should read --(R,S)-4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]but-2-yn-1-ol--

Col. 16, line 60: "containing (R,S)-1-[(4-chlorophenyl)" should read --containing (R,S)-1-[(4-chlorophenyl)--

Col. 17, line 6: "(t, J=1.72Hz, 2H), 4.20 (s, 1H), 4.29 (t, J=1.63Hz," should read --(t, J=1.72Hz, 2H), 4.20 (s, 1H), 4.29 (t, J=1.63Hz,--

Col. 17, lines 11-12: "(R,S)-4-{4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl}but-2-yn-1-ol" should read --(R,S)-4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]but-2-yn-1-ol--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 6 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 17, line 40: "3.30 (t, J=1.83 Hz, 2H), 4.21 (s, 1H), 4.29 (t, J=1.78 Hz," should read --3.30 (t, J=1.83 Hz, 2H), 4.21 (s, 1H), 4.29 (t, J=1.78 Hz,--

Col. 17, lines 44-45: "4-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(E)-but-2-en-1-ol," should read --4-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-yl]-(E)-but-2-en-1-ol,--

Col. 17, lines 49-50: "methyl 4-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(E)-but-2-enoate" should read --methyl 4-[4-[bis(4-fluorophenyl)methyl]piperazin-1-yl]-(E)-but-2-enoate--

Col. 17, line 54: "for further 1.0 hrs at" should read --for further 1.0 hr at--

Col. 18, line 2: "(d, J=5.38 Hz, 2H), 4.12 (d, J=4.40" should read --(d, J=5.38 Hz, 2H), 4.12 (d, J=4.40--

Col. 18, lines 9-10: "4-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(E)-but-2-en-1-ol" should read --4-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-yl]-(E)-but-2-en-1-ol--

Col. 18, lines 14-15: "4-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-yl}but-2-yn-1-ol" should read --4-[4-[bis(4-fluorophenyl)methyl]piperazin-1-yl]but-2-yn-1-ol--

Col. 18, line 26: "(d, J=4.91 Hz, 2H), 4.11 (d, J=3.71" should read --(d, J=4.91 Hz, 2H), 4.11 (d, J=3.71--

Col. 18, lines 32-33: "(R,S)-4-{14[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-en-1-ol," should read --(R,S)-4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-en-1-ol,--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 7 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 18, lines 37-38: "(R,S)-4-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}but-2-yn-1-ol (3.5g, mol) is converted to (R,S)-4-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-en-1-ol in a" should read --(R,S)-4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]but-2-yn-1-ol (3.5 g, mol) is converted to (R,S)-4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-en-1-ol in a--

Col. 18, line 45: "(J=4.83 Hz, 2H), 4.11 (d, J=3.52 Hz, 2H)," should read --(J=4.83 Hz, 2H), 4.11 (d, J=3.52 Hz, 2H),--

Col. 18, lines 50-51: "(R,S)-4-{4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-en-1-ol" should read --(R,S)-4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-en-1-ol--

Col. 18, lines 55-58: "(R,S)-4-{4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl}but-2-yn-1-ol (2.13g, 0.0063 mol) is converted to (R,S)-4-{4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-en-1-ol in a" should read --(R,S)-4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]but-2-yn-1-ol (2.13 g, 0.0063 mol) is converted to (R,S)-4-[4-[(4-fluorophenyl)phenyl-methyl]piperazin-1-yl]-(E)-but-2-en-1-ol in a--

Col. 18, lines 65-66: "(d, J=5.23 Hz, 2H), 4.11 (d, J=4.20 Hz, 2H)," should read --(d, J=5.23 Hz, 2H), 4.11 (d, J=4.20 Hz, 2H),--

Col. 19, lines 3-4: "Methyl 4-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(E)-but-2-enoate," should read --Methyl 4-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-yl]-(E)-but-2-enoate,--

Col. 19, line 7: "solution of methyl-4-bromocrotonate" should read --solution of methyl 4-bromocrotonate--

Col. 19, line 9: "containing 1-[bis-(4-fluorophenyl)methyl]piperazine" should read --containing 1-[bis(4-fluorophenyl)methyl]piperazine--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 8 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 19, line 25: "(d, J=5.00 Hz, 2H)," should read --(d, J=5.00 Hz, 2H),--

Col. 19, lines 32-33: "Methyl 4-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-enoate," should read --Methyl 4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enoate,--

Col. 19, line 35: "containing (R,S)-1-[(4-chlorophenyl)" should read --containing (R,S)-1-[(4-chlorophenyl)--

Col. 19, lines 36-37: "methyl-4-bromocrotonate" should read --methyl 4-bromocrotonate--

Col. 19, line 46: "(J₁=6.20 Hz, J₂=1.39 Hz, 2H)," should read --(J₁=6.20 Hz, J₂=1.39 Hz, 2H),--

Col. 19, lines 52-53: "{4-{4-[Bis-(4-fluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --[4-[4-[Bis(4-fluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 19, lines 55-56: " solution of 4-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol" should read --4-[4-[bis(4-fluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol--

Col. 19, line 57: "tert-butoxide" should read --tert-butoxide--

Col. 19, line 58: "tert-butanol" should read --tert-butanol--

Col. 19, line 62: "tert-butanol" should read --tert-butanol--

Col. 20, lines 4-5: "(d, J=7.51 Hz, 2), 3.96 (s, 2H), 4.19 (d, J= 4.51 Hz, 2)," should read --(d, J=7.51 Hz, 2H), 3.96 (s, 2H), 4.19 (d, J= 4.51 Hz, 2H),--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,297,697 B2

PAGE 9 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 20, lines 7-8: "suspension of {4-[4-[bis-(4-fluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --suspension of [4-[4-[bis(4-fluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 20, lines 17-18: "(R,S)-4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid dihydrochloride, [Ib (R,S)]" should read (R,S)-4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid dihydrochloride, [Ib (R,S)]--

Col. 20, lines 21-24: "(R,S)-4-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl}-(Z)-but-2-en-1-ol (100.0 g, 0.28 mol) is converted to (R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --(R,S)-4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-en-1-ol (100.0 g, 0.28 mol) is converted to (R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 20, line 30: "(d, J=7.43 Hz, 2H)," should read --(d, J=7.43 Hz, 2H),--

Col. 20, line 37: "(Z)-but-2-enyloxy]" should read --(Z)-but-2-enyloxy]--

Col. 20, line 40: "4-(4-Benzhydrylpiperazin-1-yl)-(Z)-but-2-en-1-ol" should read --4-(4-Benzhydrylpiperazin-1-yl)-(Z)-but-2-en-1-ol--

Col. 20, line 42: "yl)-(Z)-but-2-enyloxy]acetic" should read --yl-(Z)-but-2-enyloxy]acetic--

Col. 20, lines 49-50: "(d, J=7.53 Hz, 2H), 3.96 (s, 2H), 4.18 (d, J= 4.60 Hz, 2H)," should read --(d, J=7.53 Hz, 2H), 3.96 (s, 2H), 4.18 (d, J= 4.60 Hz, 2H),--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 10 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 20, lines 56-57: "{4-[Bis-(2,4-difluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic Acid Dihydrochloride," should read --[4-[Bis(2,4-difluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid dihydrochloride,--

Col. 20, lines 60-63: "4-{4-[Bis-(2,4-difluorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol (6.2 g, 0.0157 mol) is converted {4-{4-[bis-(2,4-difluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --4-[4-[Bis(2,4-difluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol (6.2 g, 0.0157 mol) is converted [4-[4-[bis(2,4-difluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 21, lines 2-3: "(d, J=6.07 Hz, 2H), 3.96 (s, 2H), 4.17 (d, J=3.90 Hz, 2H)," should read --(d, J=6.07 Hz, 2H), 3.96 (s, 2H), 4.17 (d, J=3.90 Hz, 2H),--

Col. 21, lines 13-14: "{4-[4-[Bis-(4-chlorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --[4-[4-[Bis(4-chlorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 21, lines 16-19: "4-{4-[Bis-(4-chlorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-en-1-ol (2.26 g, mol) is converted to {4-[4-[bis-(4-chlorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --4-[4-[Bis(4-chlorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-en-1-ol (2.26 g, mol) is converted to [4-[4-[bis(4-chlorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 21, lines 25-26: "(d, J=7.38 Hz, 2H), 3.94 (s, 2H), 4.20 (d, J=4.08 Hz, 2H)," should read --(d, J=7.38 Hz, 2H), 3.94 (s, 2H), 4.20 (d, J=4.08 Hz, 2H),--

Col. 21, lines 34-35: "{c4-{4-[Bis-(4-fluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --[4-[4-[Bis(4-fluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,297,697 B2

PAGE 11 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 21, lines 39-40: "solution of {4-{4-[bis-(4-fluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --solution of [4-[4-[bis(4-fluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 21, line 47: "(d, J=7.66 Hz, 2H)," should read --(d, J=7.66 Hz, 2H),--

Col. 21, lines 54-55: "{4-{4-[Bis-(4-fluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --[4-[4-[Bis(4-fluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 21, lines 58-59: "solution of {4-{4-[bis-(4-fluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --solution of [4-[4-[bis(4-fluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 21, lines 65-66: "(t, J=7.10 Hz, 3H), 2.70-4.30 (m, 17H), 5.70-6.20 (m, 2H), 7.10 (t, J=8.62" should read --(t, J=7.10 Hz, 3H), 2.70-4.30 (m, 17H), 5.70-6.20 (m, 2H), 7.10 (t, J=8.62--

Col. 22, lines 3-4: "{4-{4-[Bis-(4-fluorophenyl)methyl]-piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --[4-[4-[Bis(4-fluorophenyl)methyl]-piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 22, lines 7-8: "solution of {4-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(Z)-but-2-enyloxy}acetic acid" should read --solution of [4-[4-[bis(4-fluorophenyl)methyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 22, line 15: "(d, J=6.25 Hz," should read --(d, J=6.25 Hz,--

Col. 22, line 17: "(t, J=8.56" should read --(t, J=8.56--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 12 of 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 22, lines 22-24: "(R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic Acid Isopropyl Ester Dihydrochloride, (Ii):" should read --(R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid isopropyl ester dihydrochloride, (Ii)--

Col. 22, lines 26-28: "using (R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --using (R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 22, lines 29-30: "(d, J=6.26 Hz, 6H), 2.80-3.70 (m, 8H), 3.80-4.15 (m, 3H), 4.21 (d, J=5.57)" should read --(d, J=6.26 Hz, 6H), 2.80-3.70 (m, 8H), 3.80-4.15 (m, 3H), 4.21 (d, J=5.57--

Col. 22, lines 36-37: "(R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --(R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 22, lines 40-41: "solution of (R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic" should read --solution of (R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic--

Col. 22, lines 55-57: "(R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic Acid Ethyl Ester Dihydrochloride," should read --(R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid ethyl ester dihydrochloride,--

Col. 22, line 64: "(t, J=7.12 Hz," should read --(t, J=7.12 Hz,--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 13 of 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 22, lines 60-62: "using (R,S)-{4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy}acetic acid" should read --using (R,S)-[4-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-yl]-(Z)-but-2-enyloxy]acetic acid--

Col. 23, lines 3-4: "{2-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-ylmethyl}benzyloxy}acetic acid" should read --[2-[4-[bis(4-fluorophenyl)methyl]piperazin-1-ylmethyl]benzyloxy]acetic acid--

Col. 23, lines 7-10: "{2-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-ylmethyl}phenyl}methanol (5.0 g, 0.0122 mol) is converted to {2-{4-[Bis-(4-fluorophenyl)methyl]piperazin-1-ylmethyl}benzyloxy}acetic acid" should read --[2-[4-[Bis(4-fluorophenyl)methyl]piperazin-1-ylmethyl]phenyl]methanol (5.0 g, 0.0122 mol) is converted to [2-[4-[bis(4-fluorophenyl)methyl]piperazin-1-ylmethyl]benzyloxy]acetic acid--

Col. 23, lines 26-27: "(R,S) {2-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl}benzyloxy}acetic acid" should read --(R,S) [2-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl]benzyloxy]acetic acid--

Col. 23, lines 30-33: "{2-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl}phenyl}methanol (4.0 g, 9.83 mmol) is converted to {2-{4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl}benzyloxy}acetic acid" should read --[2-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl]phenyl]methanol (4.0 g, 9.83 mmol) is converted to [2-[4-[(4-chlorophenyl)phenylmethyl]piperazin-1-ylmethyl]benzyloxy]acetic acid--

Col. 23, lines 46-47: "{4-[4-[Bis-(4-fluorophenyl)methyl]piperizin-1-yl]-(E)-but-2-enyloxy}acetic acid" should read --[4-[4-[Bis(4-fluorophenyl)methyl]piperizin-1-yl]-(E)-but-2-enyloxy]acetic acid--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Publication

JUN 18 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,297,697 B2

PAGE 14 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 23, lines 51-54: "solution of 4-{4-[bis-(4-fluorophenyl)methyl]piperazin-1-yl}-(E)-but-2-en-1-ol (247.0 g, 0.689 mol) and potassium *tert*-butoxide (139.2g, 1.240mol) in anhydrous *tert*-butanol" should read --solution of 4-[4-[bis(4-fluorophenyl)methyl]piperazin-1-yl]-(E)-but-2-en-1-ol (247.0 g, 0.689 mol) and potassium *tert*-butoxide (139.2 g, 1.240 mol) in anhydrous *tert*-butanol--

Col. 23, line 58: "until *tert*-butanol is" should read --until *tert*-butanol is--

Col. 24, line 2: "J=6.79 Hz, 2H)" should read --J=6.79 Hz, 2H)--

Col. 24, lines 8-9: "(R,S)-{4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy}acetic acid" should read --(R,S)-[4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy]acetic acid--

Col. 24, lines 12-15: "(R,S)-4-{4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-en-1-ol (1.9 g, 0.0053 mol) is converted to (R,S)-{4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy}acetic acid" should read --(R,S)-4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-en-1-ol (1.9 g, 0.0053 mol) is converted to (R,S)-[4-[4-[(4-Chlorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy]acetic acid--

Col. 24, lines 27-28: "(R,S)-{4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy}acetic acid" should read --(R,S)-[4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy]acetic acid--

Col. 24, lines 31-34: "(R,S)-4-{4-[(4-Fluorophenyl)phenylmethyl]piperazin-1-yl}-(E)-but-2-en-1-ol (0.7 g, 2.06 mmol) is converted to (R,S)-{4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy}acetic acid" should read --(R,S)-4-[4-[(4-Fluorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-en-1-ol (0.7 g, 2.06 mmol) is converted to (R,S)-[4-[4-[(4-fluorophenyl)phenylmethyl]piperazin-1-yl]-(E)-but-2-enyloxy]acetic acid--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

RECEIVED-USPTO
Patent Publication

JUN 18 2008

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,297,697 B2

PAGE 15 **of** 15

DATED : NOVEMBER 20, 2007

INVENTOR(S) : MIDHA ET AL.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 25, line 55, claim 1: "or cyclo)," should read --or cyclic)--

Col. 25, line 58, claim 1: "or cyclo)," should read --or cyclic)--

Col. 26, line 2, claim 1: "either E or Z configuration;" should read --either *E* or *Z* configuration;--

Col. 26, line 41, claim 1: "or cyclo)," should read --or cyclic)--

MAILING ADDRESS OF SENDER:

Merchant & Gould P.C.
Attn: Mark T. Skoog
P.O. Box 2903
Minneapolis, MN 55402-0903

PATENT NO. 7,297,697 B2

Docket No. 15395.10USWO

No. of add'l copies 0

23552

PATENT TRADEMARK OFFICE

**RECEIVED-UNITED STATES
Patent Publication**

JUN 18 2008